INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/18731

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : C12Q 1/68; C07H 21/04
US CL : 435/6; 536/23.1
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 435/6; 536/23.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	RICH et al. RTVP-1, a novel human gene with sequence similarity to genes of diverse species, is expressed in tumor cell lines of glial but not neuronal origin. Gene. 1996, Vol. 180, pages 125-130, especially page 126, 1st column, 1st paragraph; page 129, 2nd column, 2nd paragraph.	1, 2, and 6-8

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
19 July 2005 (19.07.2005)

Date of mailing of the international search report
28 JUL 2005

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Form PCT/ISA/210 (second sheet) (January 2004)

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1,2 and 6-8

Remark on Protest
☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1, 2, and 6-8, drawn to an isolated nucleic acid pertaining to SEQ ID NO: 2, a vector comprising said isolated nucleic acid, and a host cell comprising said vector, and a method of its use to express a polypeptide.

Group II, claim(s) 3 and 9-12, drawn to an isolated polypeptide pertaining to SEQ ID NO: 2 and a kit comprising the polypeptide.

Group III, claim(s) 4 and 5, drawn to an antibody, monoclonal for detecting polypeptide pertaining to SEQ ID NO: 2.

Group IV, claim(s) 13, drawn to RGL receptor protein that binds polypeptide of SEQ ID NO: 2.

Group V, claim(s) 14, 15, and 19-21, drawn to an isolated nucleic acid pertaining to SEQ ID NO: 3, a vector comprising said nucleic acid, a host cell comprising said vector, and a method of the use of host cell.

Group VI, claim(s) 16, 22-25, 27-31, and 38, drawn to an isolated protein of SEQ ID NO: 4, a kit comprising said protein, and a vaccine comprising said protein.

Group VII, claim(s) 17, 18, and 32-37, drawn to an antibody, monoclonal antibody directed to polypeptide of SEQ ID NO: 4, a kit comprising said antibody, and a hybridoma producing said antibody.

Group VIII, claim(s) 26, drawn to RGL receptor that binds the protein of SEQ ID NO: 4.

Group IX, claim(s) 39-43, drawn to a method of treating a patient via administration of the polypeptide of SEQ ID NO: 4.

Group X, claim(s) 44-48, drawn to a method of treating a patient via administration of the polypeptide of SEQ ID NO: 2.

Group XI, claims 49-52, drawn to a composition comprising a vector comprising the promoter for RGL to any gene.

Group XII, claim(s) 53-57, drawn to a method of treating a patient via administration of the nucleic acid of SEQ ID NO: 1.

Group XIII, claim(s) 58-62, drawn to a method of treating a patient via administration of the nucleic acid of SEQ ID NO: 3.

The inventions listed as Groups I-XIII do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Groups I-IV lack unity of invention based on that the nucleic acids, polypeptides, antibodies, and receptor proteins are all structurally unrelated, the conditions of which govern their use are also unrelated.

Groups V-VIII lack unity of invention based on that the nucleic acids, polypeptides, antibodies, and receptor proteins are all structurally unrelated, the condition of which govern their use are also unrelated.

Further, Groups I-IV lack unity of invention from Groups V-VIII because Groups I-IV pertain to a nucleic acid of SEQ ID NO: 1 and its encoded protein of SEQ ID NO: 2, while Groups V-VIII pertain to a different isoform of the nucleic acid of SEQ ID NO: 3 and its encoded protein of SEQ ID NO: 4, structurally unrelated in that they comprises different sequences.

Groups IX and XIII lack unity of invention from Group I-IV because Groups IX and XIII pertain to the protein of SEQ ID NO: 4 and the nucleic acid of SEQ ID NO: 3, while Groups I-IV pertain to the protein of SEQ ID NO: 2 and the nucleic acid of SEQ ID NO: 1, disclosed as being different in sequences, thus unrelated in structure, lacking in the unity of invention.

Group X and XII lack unity of invention from Groups V-VIII because Groups X and XII pertain to the protein of SEQ ID NO: 2 and the nucleic acid of SEQ ID NO: 1, while Groups V-VIII pertain to the protein of SEQ ID NO: 4 and the nucleic acid of SEQ ID NO: 3, disclosed as being different in sequences, thus unrelated in structure, lacking in the unity of invention.

Group XI lacks unity of invention from Groups I-X, XII, and XIII because the composition of Group IX has no relation to the nucleic acid or polypeptide of SEQ ID Numbers 1 and 2; and SEQ ID Numbers 3 and 4, respectively.

Additionally, with regard to Groups IX, X, XII, and XIII, 37 CFR 1.475 (b), states that claims drawn to different categories of invention will be considered to have unity of invention if the claims are drawn only to one of the following combination of categories:

(1) A product and a process of producing the product
(2) A product and a process of using the product
(3) A product, process of producing the product, and a process of using the product
(4) A process and an apparatus or means to carryout the process
(5) A product, a process of producing the product, and an apparatus of means to carryout the process.

An application containing claims to more or less than one of the "combinations of categories" of inventions set forth above, unity of invention might not be present. (MPEP 1850).

Inventions covered by Groups I, II, V, and VI comprise a product, a method of producing the product, and/or method of using the product as required in 37 CFR 1.475 (b). Because the Groups already include one of the above combinations, any additional categories of inventions in Groups IX, X, XII, and XIII have been determined to lack unity of invention in pursuant to 37 CFR 1.475(b).

Continuation of B. FIELDS SEARCHED Item 3:
Patent Databases
NPL (Eslevier)
search terms: RGL, RTVP-1.